

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Commissioner for Patents
Alexandria, VA 22313-1450

APPELLANT'S BRIEF

Commissioner for Patents
Washington D.C. 20231

Sir:

This is an ex parte appeal from the decision of the Examiner in the Final Rejection dated March 27, 2009 in the above-identified application, rejecting all claims in the application. The due date for filing this brief was July 1, 2010. Please extend the time for two months, to September 1, 2010, the fee for which is paid herewith. This brief is accompanied by the requisite fee set forth in 37 C.F.R. §1.17(c).

APPELLANT’S BRIEF	1
REAL PARTY IN INTEREST	3
RELATED APPEALS AND INTERFERENCES	3
STATUS of CLAIMS	3
STATUS of AMENDMENTS	3
SUMMARY OF THE CLAIMED SUBJECT MATTER	3
GROUND FOR REJECTION TO BE REVIEWED ON APPEAL	25
ARGUMENT	26
CONCLUSION	52
CLAIMS APPENDIX	54
EVIDENTIARY APPENDIX	78
Related Proceedings Appendix	79

TABLE OF AUTHORITIES

<i>In re Fritch</i> , 23 U.S.P.Q.2d 1781, 1783 (Fed.Cir. 1992)	26
<i>In re Piasecki</i> , 223 U.S.P.Q. 785, 787 (Fed.Cir. 1984)	26
<i>Ex parte Blanc</i> , 13 USPQ2d 1383 (Bd. Pat. App.& Inter. 1989)	27
<i>KSR v. Teleflex</i> , 127 S. Ct. 1727, 1742 (2007)	34
<i>In re Kahn</i> , 441 F.3d 977, 988 (CA Fed. 2006)	35

REAL PARTY IN INTEREST

The application is assigned to Swisscom LTD, of Switzerland.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS of CLAIMS

Claims 1 through 5, 7 through 24, 26 through 28, and 30 through 64 are pending in the application. All claims have been finally rejected under 35 U.S.C. §103(a). The rejection of these claims is appealed. The claims are attached herewith as Appendix A. All references to the claims contained herein will correspond to claim line numbers as shown in this appendix.

STATUS of AMENDMENTS

No amendment has been filed since the final rejection of March 27, 2009.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention provided by the subject matter found in independent claims 1, 30, 50, 52, 53, 55, 57, & 60-65, and described in the as-filed specification (and the published application publication no. 2009/835237), generally relates to a voice

portal hosting system and method for hosting a plurality of voice applications and services from different external value-added service providers and sharing common user-specific speech models for use by these applications and for adaptation during their use. Thus, many service providers can share these common models and their adaptations. (see Fig. 1 and accompanying description) The invention provides a novel, non-obvious device and method for performing these features.

A simplified description of this system and method is that, via a voice portal hosting system, a plurality of users in a voice telecommunication network can establish a connection with a plurality of interactive voice response applications that have been independently uploaded by a plurality of independent value-added service providers (see page 4, lines 5-11). Thus, the telecommunication provider can offer such functions as a service to both users and providers. The plurality of interactive voice response applications can use a common speech recognition module on the system (see page 4, lines 11-12). This voice portal system and method 20 help the user avoid the need for an explicit user enrollment in simple services and offers an implicit adaptation technique that learns the user's habits, speech accent, and language model used (see page 3, lines 19-23).

More specifically, referring to Figure 1, a telecommunication system

includes a voice portal hosting system 2. A plurality of users 1 can establish a voice connection with this voice portal 2 over a public telecommunication network 10 (see Fig. 1 and page 5, lines 6-7). The connection is established by selecting the voice portal 2 phone number on a user terminal equipment 11, such as a phone terminal (see Fig. 1 and page 5, lines 10-12). For user to access the system 2, the system includes a user identification module 25 for determining the identity of the user 1. The module 25 may use one or a combination of an authentication CLI or IMSI (International Mobile 15 Subscriber Identification) of the terminal 11 used by the user and a user keypad or uttered identity for determining his identity (see Fig. 1 and page 6, lines 12-17).

The voice portal hosting system also includes a dialogue manager using a speech synthesizer and a speech recognition module 24 (speech recognizer) for establishing a spoken dialogue with the user 1 (see Fig. 1 and page 5, lines 15-18). The speech recognition module may use a HMM (Hidden Markov Models), adaptive neural networks or hybrids networks (see page 5, lines 20-22).

Once the user has been identified by the module 25, his speech and language models and profile can be retrieved from the databases 20, 21 and 22 (see Fig. 1 and page 7, lines 1-3). The dialogue manager answers commands or requests uttered by the user with the requested information or service or by establishing a

new 20 connection with an external server (see Fig. 1 and page 5, lines 18-20). The system 2 may further contain speech and speaker models and language models for each registered user; those models may be stored in databases 20, 21 or contained in the speech recognizer 24 (see Fig. 1 and page 6, lines 8-11). The dialogue manager and speech recognizer 24 use the databases in order to adapt the dialogue and the speech recognition to each user, which achieves better performance and increases the quality of service (see Fig. 1 and page 7, lines 1-7). Also, a good speaker-independent model set, using only a small amount of data from a new user, can be adapted using maximum likelihood linear regression to fit the characteristics of each user (see page 7, lines 9-13).

The speech recognizer 24 or the user identification module 25 can make use of a common on-line speech adaptation module 24 for adapting the speech and language models and for adapting the HMMs in the speech recognizer 24 and speaker identification module 25 (see Fig. 1 and page 8, lines 21-25). The result of using a common on-line speech adaptation module is that the speech recognition may be enhanced personalization of the speech recognition to each user 1 and an increase of the quality and performance of the speech recognition and speaker identification (see Fig. 1 and page 8, lines 21-34) .

In particular, the apparatus, as defined in claim 1, involves the novel and

non-obvious elements, mapped to the specification of:

- a memory in which a plurality of interactive voice response applications providing interactive voice response functionality is stored, (page 4, lines 5-10)
- each of said applications including an executable component for execution by said hosting system; (page 8, lines 4-7)
- a common speech recognition module; (Fig. 1, item 24; Page 2, lines 15-17; page 4, lines 11-12)
- means for storing a plurality of user-specific speech models adapted to specific users for use by the common speech recognition module (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table);
- means for retrieving the user-specific speech model of the identified user from said plurality of models (page 7, lines 1-5; page 11, right column cell 2 of table);
- and uploading means for independently uploading said plurality of interactive voice response applications, to said system in advance of any ordering of said products and/or services, by said plurality of independent value-added service providers, (page 4, lines 5-11; page 7, lines 22-24)
- wherein the identified user interacts with one or more of said interactive voice response applications, (page 2, lines 6-10; page 11, lines 5-7)
- and wherein said one or more interactive voice response applications utilize said retrieved user-specific speech model via said common speech recognition module for recognizing speech of the identified

user, (page 7, lines 1-5)

- wherein each of said interactive voice response applications includes an executable component for execution by said hosting system, (page 8, lines 4-7)
- and wherein said user-specific speech model is further adapted to the specific user during said ordering of said product and/or services from any one of said service providers such that said further adapted model is then utilized for future ordering of products and/or services from any other of said service providers. (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)

In particular, the apparatus, as defined in claim 30, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing a plurality of user-specific speech models adapted to specific users for use by a common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table);
- identifying a user calling said system; (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the identified user from said plurality of models; (page 7, line 8-14; page 11, right column cell 2 of table)
- independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality in advance of any ordering of said products and/or services; (Page 4, lines 5-11; page 7, lines 22-24)

- the identified user interacting with one or more of said interactive voice response applications; and (page 2, lines 6-10; page 11, lines 5-7)
- said one or more of said interactive voice response applications using said retrieved user-specific speech model via said common speech recognition module for executing on said hosting system for recognizing speech of the identified user for ordering said products (Fig. 1, item 24; page 4, lines 11-12; page 11, lines 5-9)
- and/or services from one of said service providers such that said user-specific speech model is further adapted during said ordering such that said further adapted model is then utilized for future ordering of products and/or services from another of said service providers. (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)

In particular, the apparatus, as defined in claim 50, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- independently uploading, through a second telecommunication network, (page 4, lines 9-10; page 12, lines 2-8)
- said interactive voice response applications to said system for providing interactive voice response functionality, said uploading done in advance of any ordering of said products and/or services, (Page 4, lines 5-11; page 7, lines 22-24)
- storing a plurality of user-specific speech models adapted to specific users for use by a common speech recognition module, (Fig. 1, item 20, 24; page 7, line 8-14; page 11, right column cell 2 of table)

- identifying a user calling said system, (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the identified user from said plurality of models, (page 7, line 8-14; page 11, right column cell 2 of table)
- and executing one or more of said voice response applications in response to the user calling said system, (page 11, line 5-9; pages 10-11, table)
- said executing including interacting with said user via said common speech module using said retrieved user-specific speech model for recognizing the speech of the user for ordering the products and/or services from one of said service providers, wherein (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)
- said interactive voice response applications include an executable component for execution by said hosting system, and wherein (page 8, lines 4-7)
- said common speech models are adapted during each dialogue between said user calling the system and any of said interactive voice response applications of said one of said service providers during said ordering, (page 7, lines 1-5; page 8, lines 21-25)
- such that said adapted speech models can be utilized by the other interactive voice response applications for the user ordering products and/or services from the other service providers. (page 4, lines 11-12; page 7, lines 27-31)

In particular, the apparatus, as defined in claim 52, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- means for independently uploading a plurality of interactive voice response applications from said service providers, to said system, via a communication channel in advance of ordering products or services using the system, (page 4, lines 5-11; page 7, lines 22-24)
- each of said voice response applications for providing interactive voice response functionality for a corresponding one of said service providers when executed by said hosting system, (page 4, lines 7-11; page 11, line 5-9)
- wherein said interactive voice response applications include an executable component for execution by said hosting system, said executable component comprising at least one of an executable file, a Java Bean, a Corba-component, a compiled software module, and a pre-compiled software module; (page 8, lines 4-10)
- means for storing said plurality of interactive voice response applications; (Page 4, lines 5-11; page 7, lines 22-24)
- a common speech recognition module; (Fig. 1, item 24; Page 2, lines 15-17; page 4, lines 11-12)
- means for storing a plurality of user-specific speech models adapted to specific users for use by the common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- a user identification module for identifying a user calling said system via another communication channel; (Fig. 1, item 25; page 6, lines 12-13; page 6, lines 21-24; page 11, right column cell 2 of table)

- means for retrieving the user-specific speech model of the identified user from said plurality of models, wherein (page 7, lines 1-5; page 11, right column cell 2 of table);
- the identified user interacts with one or more of said interactive voice response applications, and wherein (page 2, lines 6-10; page 11, lines 5-7)
- said one or more interactive voice response applications utilize said retrieved user-specific speech model via said common speech recognition module for recognizing speech of the identified user, and further wherein (page 7, lines 1-5; page 11, right column cell 2 of table)
- said common speech models are adaptable during dialogue between said users and any of said interactive voice response applications during ordering of products and/or services from the corresponding providers (page 7, lines 1-5; page 8, lines 21-25)
- such that said adapted speech models are thereafter utilized by others of said voice response applications for ordering products and/or services of the corresponding other providers. (page 4, lines 11-12; page 7, lines 27-31)

In particular, the apparatus, as defined in claim 53, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- a memory in which a plurality of interactive voice response applications providing interactive voice response functionality is stored, (page 4, lines 5-10)

- each of said applications including an executable component for execution by said hosting system; (page 8, lines 4-7)
- a common speech recognition module; (Fig. 1, item 24; Page 2, lines 15-17; page 4, lines 11-12)
- means for storing a plurality of user-specific speech models adapted to specific users for use by the common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- a user identification module for identifying a known user or a new user; (Fig. 1, item 25; page 6, lines 12-13; page 6, lines 21-24; page 11, right column cell 2 of table)
- means for retrieving the user-specific speech model of the known user from said plurality of models; (page 7, lines 1-5; page 11, right column cell 2 of table)
- means for updating said user-specific speech models to the new user without using any training phase; (page 7, lines 8-13)
- and uploading means for independently uploading said plurality of interactive voice response applications, to said system, by a plurality of independent value-added service providers, wherein (Page 4, lines 5-11; page 7, lines 22-24)
- the identified user interacts with one or more of said interactive voice response applications, and wherein (page 2, lines 6-10; page 11, lines 5-7)
- said one or more interactive voice response applications utilize said retrieved user-specific speech model via said common speech recognition module for recognizing speech of the known user ordering

a product and/or service from one of said providers, (page 7, lines 1-5; page 11, right column cell 2 of table)

- and for further adapting said user-specific speech model during said ordering such that said adapted user-specific speech model can thereafter be utilized for ordering a product and/or service from another of said providers, and wherein (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)
- speaker independent models are used for a new user prior to updating said user-specific speech models to make the new user into a known user. (page 7, lines 10-13; page 8, lines 31-34)

In particular, the apparatus, as defined in claim 55, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing a plurality of user-specific speech models adapted to known users for use by a common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- identifying a user calling said system as a known user or a new user; (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the known user from said plurality of models or else (page 7, line 8-14; page 11, right column cell 2 of table)
- retrieving a speaker independent model for the new user and generating a user-specific speech model for the new user without using any training phase; (page 7, lines 8-13)
- independently uploading, to said system, said interactive voice response applications which provide interactive voice response

functionality; (page 4, lines 5-11; page 7, lines 22-24; page 4, lines 5-11)

- the identified user interacting with one of said interactive voice response applications; and (page 2, lines 6-10; page 11, lines 5-7)
- said one of said interactive voice response applications using said retrieved user-specific speech model or (page 7, lines 1-5; page 11, right column cell 2 of table)
- said retrieved speaker independent speech model via said common speech recognition module for executing on said hosting system for recognizing speech of the known user or the new user, respectively for ordering a product or service from one of said providers, such that (Fig. 1, item 24; page 7, lines 1-5; page 11, right column cell 2 of table; page 8, lines 4-7)
- a user-specific speech model for the new user is created or the retrieved user-specific speech model of the known user is further adapted during said ordering such that said user-specific speech model is thereafter made available for the new or known user to interact with another of said interactive voice applications for ordering a service or product from another of said providers. (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)

In particular, the apparatus, as defined in claim 57, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing said interactive voice response applications from said providers on said system for providing interactive voice response

functionality, (page 4, lines 5-11; page 7, lines 22-24; page 8, lines 1-4)

- storing a plurality of user-specific speech models adapted to known users for use by a common speech recognition module, (Fig. 1, item 20; page 7, line 8-9; page 11, right column cell 2 of table)
- identifying a user calling said system as a known user or new user, (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the known user from said plurality of models or (page 7, line 8-14; page 11, right column cell 2 of table)
- retrieving a speaker independent model for a new user and adapting a user specific speech model for the new user, (page 7, lines 8-13)
- and executing one of said voice response applications associated with one of said providers in response to the user calling said system, (page 11, row 2 of table)
- said executing including interacting with the user via said common speech module using said retrieved user-specific speech model for recognizing the speech of the known user or using said retrieved speaker independent model for the new user, wherein (Fig. 1, item 24; page 2, lines 15-21; page 11, row 2 of table)
- said common speech models are adapted during each dialogue between said users and any of said interactive voice response applications without using any training phase and wherein (page 5, lines 15-20; pages 11-12, table)
- the user-specific speech model for the user is further adapted during said interacting such that said user-specific speech model is thereafter

made available for interacting with any other of said voice response applications associated with another of said providers. (page 7, lines 24-26; pages 10-11, lines 30-2)

In particular, the apparatus, as defined in claim 60, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- independently uploading, through a second telecommunication network, said interactive voice response applications to said system for providing interactive voice response functionality, (page 4, lines 8-11)
- wherein said interactive voice response applications include an executable component for execution by said hosting system, (page 8, lines 4-7)
- storing a plurality of user-specific speech models adapted to known users for use by a common speech recognition module, (Fig. 1, item 24; Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- identifying a user calling said system as a known user or new user, (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the known user from said plurality of models or (page 7, line 8-14; page 11, right column cell 2 of table)
- retrieving a speaker independent model for a new user and adapting a user specific speech model for the new user, (page 7, lines 8-13)
- executing one or more of said voice response applications in response to the user calling said system, (page 11, row 2 of table)

- said executing including interacting with the user via said common speech module using said retrieved user-specific speech model for recognizing the speech of the known user or using said retrieved speaker independent model for the new user, wherein (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)
- said common speech models are incrementally adapted during each dialogue between said users and any of said interactive voice response applications using recording speech samples and without using any training phase (page 7, lines 1-5; page 8, lines 21-25)
- such that said adapted models are thereafter made available for use by all of said interactive voice response applications of the providers, and wherein (page 7, lines 8-14)
- said common speech recognition module comprises a common user profile database including user preferences. (page 10, lines 20-22; page 10, lines 26-30)

In particular, the apparatus, as defined in claim 61, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- a memory in which a plurality of interactive voice response applications providing interactive voice response functionality is stored, (page 4, lines 5-10)
- each of said applications including an executable component for execution by said hosting system; (page 8, lines 4-7)
- a common speech recognition module; (Fig. 1, item 24; Page 2, lines 15-17, page 4, lines 11-12)

- means for storing a plurality of user-specific speech and language models adapted to specific users for use by the common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- a user identification module for identifying a user; (Fig. 1, item 25; page 6, lines 12-13; page 6, lines 21-24; page 11, right column cell 2 of table)
- means for retrieving the user-specific speech and language model of the identified user from said plurality of models; (page 7, line 8-14; page 11, right column cell 2 of table)
- and uploading means for independently uploading said plurality of interactive voice response applications in advance, to said system, by a plurality of independent value-added service providers, wherein (page 4, lines 5-11; page 7, lines 22-24)
- the identified user interacts with one of said interactive voice response applications for ordering a product or service from the provider corresponding to the one of said interactive voice response applications, and wherein (page 11, lines 3-9; page 11-12, table)
- said one of said interactive voice response applications utilizes said retrieved user-specific speech and language model via said common speech recognition module for recognizing speech of the identified user during said ordering, and (page 7, lines 1-5; page 11, right column cell 2 of table)
- wherein said retrieved user-specific speech model is further adapted to the specific user during said ordering from said corresponding service provider such that said further adapted retrieved user-specific speech

model is thereafter utilized by any other of said interactive voice response applications for future ordering of products and/or services from the other corresponding service providers. (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)

In particular, the apparatus, as defined in claim 62, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing a plurality of user-specific speech and language models adapted to specific users for use by a common speech recognition module; (Fig. 1, items 20, 24; Page 2, lines 15-17; page 7, line 8-14; page 11, right column cell 2 of table)
- identifying a user calling said system; (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech and language model of the identified user from said plurality of models; (page 7, line 8-14; page 11, right column cell 2 of table)
- independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality; (Page 4, lines 5-11; page 7, lines 22-24)
- the identified user interacting with one of said interactive voice response applications; and (page 2, lines 6-10; page 11, lines 5-7)
- said one of said interactive voice response applications using said retrieved user-specific speech and language model via said common speech recognition module (page 7, lines 1-5; page 11, right column cell 2 of table)

- for executing on said hosting system for recognizing speech of the identified user for ordering products and/or services from the provider corresponding to said one of said interactive voice response applications, and (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)
- wherein, said retrieved user-specific speech model is further adapted to the identified user during said ordering such that said further adapted retrieved user-specific speech model is thereafter utilized for ordering of products and/or services from any others of said service providers using their corresponding interactive voice response application(s). (page 7, lines 1-7, page 8, lines 21-25)

In particular, the apparatus, as defined in claim 63, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing a plurality of user-specific speech models adapted to specific users for use by a common speech recognition module; (Fig. 1, item 20; page 7, line 8-14; page 11, right column cell 2 of table)
- identifying user equipment being used by a user calling said system; (page 6, line 21-24)
- identifying the user using the user equipment; (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech model of the identified user from said plurality of models; (page 2, lines 17-19; page 7, line 1, page 11, right column cell 2 of table)

- independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality; (Page 4, lines 5-11; page 7, lines 22-24)
- the identified user interacting with one of said interactive voice response applications; and (page 2, lines 6-10; page 11, lines 5-7)
- said one of said interactive voice response applications of one of said providers using said retrieved user-specific speech model via said common speech recognition module for executing on said hosting system for recognizing speech of the identified user and for updating said retrieved user-specific speech model, (Fig. 1, items 20, 24; page 7, lines 1-5; page 11, right column cell 2 of table)
- wherein said interactive voice response applications include an executable component for execution by said hosting system, and wherein (page 8, lines 4-7)
- said further adapted retrieved user-specific speech model is made available for use by others of said interactive voice response applications of the other providers. (page 5, line 25 to page 6, line 3; page 11, lines 3-9; pages 10-11, table)

In particular, the apparatus, as defined in claim 64, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- a memory in which a plurality of interactive voice response applications providing interactive voice response functionality is stored, (page 4, lines 5-10)
- each of said applications including an executable component for execution by said hosting system; (page 8, lines 4-7)

- a common speech recognition module; (Fig. 1, item 24; Page 2, lines 15-17; page 4, lines 11-12)
- means for storing a plurality of user-specific speech models adapted to specific users for use by the common speech recognition module (Fig. 1, item 20, 24,);
- a user identification module for identifying a user; (Fig. 1, item 25; page 6, lines 12-13; page 6, lines 21-24; page 11, right column cell 2 of table)
- means for retrieving the user-specific speech model of the identified user from said plurality of models; (page 7, lines 1-5; page 11, right column cell 2 of table)
- and uploading means for independently uploading said plurality of interactive voice response applications, to said system, by a plurality of independent value-added service providers, wherein (page 7, lines 20-24; page 8, lines 1-4)
- the identified user interacts with one of said interactive voice response applications of a correspond one of said providers, and wherein (page 11-12, table)
- said one of said interactive voice response applications utilize said retrieved user-specific speech model via said common speech recognition module for recognizing speech of the identified user, (page 7, lines 1-5; page 11, right column cell 2 of table)
- wherein said retrieved user-specific speech model is further adapted during said interacting and is thereafter made available for use by others of said interactive voice response applications of others of said

providers, and wherein (page 7, lines 1-5; page 11, right column cell 2 of table; page 7, lines 27-31)

- said common speech recognition module, said user-specific speech models, and said plurality of interactive voice response applications are all hosted in a single host. (Fig. 1, item 2; page 4, lines 13-15)

In particular, the apparatus, as defined in claim 65, involves the novel and non-obvious elements, mapped to the specification and drawings of:

- storing a plurality of user-specific speech and language models adapted to specific users for use by a common speech recognition module; (Fig. 1, item 20, 21, 24; page 4, lines 16-18; page 7, line 8-10; page 11, right column cell 2 of table)
- identifying a user calling said system; (page 2, lines 17-19; page 7, line 1)
- retrieving the user-specific speech and language model of the identified user from said plurality of models; (page 7, line 8-14; page 11, right column cell 2 of table)
- independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality; (Page 4, lines 5-11; page 7, lines 22-24)
- the identified user interacting with one of said interactive voice response applications of a corresponding one of said providers; and (page 2, lines 6-10; page 11, lines 5-7)
- said one or more of said interactive voice response applications using said retrieved user-specific speech and language model via said common speech recognition module for executing on said hosting

system for recognizing speech of the identified user, (Fig. 1, items 20, 21, 24; page 4, lines 11-12; page 11, lines 5-9)

- wherein said interactive voice response applications include an executable component for execution by said hosting system, and wherein (page 8, lines 4-7)
- said retrieved user-specific speech and language model is adapted during said interacting. (page 3, lines 21-23)

In this manner, the invention as defined in the claims provides a new and useful method and apparatus for using a GPS System for determination in an integrated time-determining system.

GROUND S FOR REJECTION TO BE REVIEWED ON APPEAL

The grounds for rejection to be reviewed on appeal are as follows:

Issue 1: Whether Claims 1-5, 7-12, 15, 18-24, 26-28, 30-39, 42-50, 52, and 53-66 are patentable under 35 U.S.C. §103(a) over U.S. Pat. No. 6,792,086 to Saylor *et al.* in view of U.S. Pat. No. 6,341,264 to Kuhn *et al.*

The issue is whether Saylor *et al.* (U.S. Pat. No. 6,792,086—hereinafter “Saylor”), which teaches a Voice Network Access Provider System and Method, in combination with Kuhn *et al.* (U.S. Pat. No. 6,341,264—Hereinafter “Kuhn”), which teaches an Adaptation System and Method for E-Commerce and V-Commerce Applications, suggests a Voice Portal System and Method, as claimed.

Issue 2: Whether Claims 13-14 are patentable under 35 U.S.C. §103(a) over Saylor and Kuhn in view of additional references.

The issue is whether the addition of Beyda *et al.* (U.S. Pat. No., 6,487,277—hereinafter “Beyda”) in addition to Saylor and Kuhn makes claims 13-14 unpatentable. The issue is whether the addition of Woods *et al.* (U.S. Pat. No., 6,510,417—hereinafter “Woods”) in addition to Saylor and Kuhn makes claims 16-17 and 40-41 unpatentable.

Issue 3: Whether Claims 16-17 and 40-41 are patentable under 35 U.S.C. §103(a) over Saylor and Kuhn in view of additional references.

The issue is whether the addition of Woods *et al.* (U.S. Pat. No., 6,510,417—hereinafter “Woods”) in addition to Saylor and Kuhn makes claims 16-17 and 40-41 unpatentable.

ARGUMENT

The invention as claimed is not taught by the cited prior art references, either individually or in combination. Accordingly, the invention is patentable as claimed.

Inventions are patentable if novel and nonobvious. 35 U.S.C. §102 and 35 U.S.C. §103. The burden is on the Patent Examiner to establish a *prima facie* case of unpatentability by presenting prior art references teaching every element of the claim. M.P.E.P. §2142; M.P.E.P. §2142, ¶3; *In re Fritch*, 23 U.S.P.Q.2d 1781, 1783 (Fed.Cir. 1992); *In re Piasecki*, 223 U.S.P.Q. 785, 787 (Fed.Cir. 1984). The Examiner has failed to establish a *prima facie* case of unpatentability. None of the cited references disclose or suggest the claimed features of the invention, alone or in combination.

The Examiner is required to support an obviousness rejection with reasonable specificity in order to establish a *prima facie* case. See Ex parte Blanc, 13 USPQ2d 1383 (Bd. Pat. App. & Inter. 1989); see also M.P.E.P. §2142, ¶5. The Examiner, however, has failed to even minimally explain how the cited art shows all of the elements of the claimed invention. Consequently, because the examiner has not met the burden of the *prima facie* case of obviousness, the applicant is not required to present evidence of non-obviousness. M.P.E.P. §2142, ¶1. Therefore, a rejection based on 35 U.S.C. §103(a) is improper and the claims, as written, should be allowed.

I. **Issue 1: Whether Claims 1-5, 7-12, 15, 18-24, 26-28, 30-39, 42-50, 52, and 53-66 are patentable under 35 U.S.C. §103(a) over U.S. Pat. No. 6,792,086 to Saylor et al. in view of U.S. Pat. No. 6,341,264 to Kuhn et al.**

A. **The Saylor and Kuhn References, Even in Combination, Do Not Teach the *Shared User-Specific Speech Models That are Updated During Use* for one Service Provider while Benefiting *Other Service Providers*, as provided by Independent Claim 1.**

Claim 1 recites a voice portal hosting system comprising a “memory in which a plurality of interactive voice response applications providing interactive voice response functionality is stored” a “common speech recognition module” and “means for storing a plurality of user-specific speech models adapted to specific users for use by the common speech recognition module” such that “said one or more interactive voice response applications utilize [a] retrieved user-specific

speech model via said common speech recognition module for recognizing speech of the identified user” wherein “said user-specific speech model is further adapted to the specific user *during said ordering* of said product and/or services from any one of said service providers such that said further adapted model is then utilized for future ordering of products and/or services from any *other* of said service providers” (emphasis added).

Hence, a common speech recognition module uses interactive voice response applications provided by the providers and adaptable user-specific speech models for providing voice response functionality for supporting user interactions with a *plurality* of service providers, where the user-specific speech models are updated *while a user is ordering* from one service provider, but the update models are also utilized when the user later orders from *another* provider, thereby sharing the user-specific models for use by a plurality of providers. Therefore, the plurality of service providers collectively benefit from the improved voice response capability of updated user-specific speech models whenever the user orders from any *one* of the service providers leading to an update of the models, thereby resulting in shared improvements by sharing such models among the providers. This capability is not found in the prior art.

The Examiner admits that Saylor fails to disclose such user-specific speech models, and instead cites Kuhn for such a teaching (see pages 4-5 of the

outstanding Office action). For the feature of updating the models during ordering for one service provider, but making the updated models available to other service providers, the Examiner specifically cites FIG. 5, and/or col. 9, lines 29-57 of Kuhn. However, a review of the cited sections (and the entire reference) fails to show any such features being disclosed by Kuhn.

FIG. 5 of Kuhn appears to show that a speech model is improved by iterating over the initial construction of HMMs. The description of FIG. 5 states that it is a “data flow diagram illustrating how an adapted model is *constructed...*” (emphasis added). Hence, the figure is actually about *initially constructing* the model, not updating an existing model during use with the user for whom the model is based. This interpretation is also supported by box 140 entitled “New Speaker” in FIG. 5, which implies that the entire flow chart merely reflects the *initial construction* of the model. In contrast, the flow chart does not support the concept that the model is refined at some point *after* initial construction (e.g., during use in an ordering process, as required by the claim).

Similarly, col. 9, lines 29-67 discusses speaker adaptation of the model, but fails to provide any disclosure that such adaptation occurs during any user ordering functions. In fact, the discussion also makes clear that it is referring to a “new speaker” (see col. 9, lines 35, 36, 44, 56, and 64, among other in col. 10), and thus referring to the initial construction of a model. Nothing in this section teaches or

implies that Kuhn is discussing a process where user speech models are *updated* during user ordering of services (or any other use).

Furthermore, Kuhn fails to teach any use of such updated user-specific models by *other* service providers. The claim specifically requires that user speech models updated during ordering from one service provider are made available for use in ordering from *other* providers. This provides the benefit that speech models can be updated more rapidly than otherwise would occur because the service providers can pool the updating process among many players during many different ordering sessions, rather than merely applying them to individual service providers which would take much longer to improve the models. Nothing in Kuhn shows that such a process was suggested or anticipated, and in fact, the reference clearly discusses only the initial construction of the models, and completely fails to suggest that the models be updated during an ordering process or used by a plurality of providers.

In fact, the Examiner's rejections do not even specifically address the above discussed features. Instead, the Examiner is apparently solely relying on a teaching of user-specific speech models in Kuhn being refined during construction, and that alone the Examiner relies upon for his rejection, despite these differences having been specifically pointed out to the Examiner in an interview and in previous responses. In any case, the combination of Saylor and Kuhn fail to teach

the cited features, as discussed above, and thus claim 1 is patentable over the references for at least those reasons, i.e., that the references fail to teach the models being adapted during use and thereafter provided for use by other vendors as well.

B. The Saylor Reference Fails to Teach Uploading Interactive Voice Response Applications including an Executable Component, as provided by Independent Claim 1.

Claim 1 also specifies the system comprising “uploading means for independently uploading said plurality of interactive voice response applications, to said system in advance of any ordering of said products and/or services, by said plurality of independent value-added service providers” where the interactive voice response applications include “an executable component for execution by said hosting system”. Although cited by the Examiner for such a teaching, Saylor fails to teach this feature of claim 1.

The Examiner cites Saylor as teaching the uploading of VPages to a VPage server, citing FIG. 3 and col. 21, lines 10-45. But as the reference makes clear in the cited section, the uploaded VPages are merely text-based data that are translated by the translation system 58 into voice communications (see col. 21, lines 10-12). Although it is disclosed that the system may also provide an e-mail or FTP processing system (see lines 12-13), the disclosed system does not include any ability to *execute* any provider provided code. The reference makes clear that the system is merely providing *content* providers a means to “call in to [the] VPage

server system 22 and directly record voice content and store the content in the VPage database as text” (lines 18-19), which is providing mere data. Content providers may “provide voice content to be included in VPages to the VPage server 22 from a plurality of different mechanisms” (lines 33-35) and these may be in files that include “sound, text, or other format” (lines 40-41). But nowhere does the reference teach that anything uploaded is in any way “executable”. Instead, it is clear from the cited section that the uploads are nothing more than data that are used to support voice communications functionality already present on the system.

Accordingly, because Saylor fails to teach any ability to upload interactive voice response applications including an *executable* component, nor any ability to execute such content, claim 1 is also patentable over the combination of Saylor and Kuhn for this reason as well.

C. The Combination of Saylor with Kuhn fails to Teach the Use of User-Specific Speech Models to Support a *Plurality* of Providers.

As discussed in section A above, claim 1 specifically requires that a plurality of user specific speech models are provided by the system that are “adapted to specific users for use by the common speech recognition module” in support of a plurality of service providers. As discussed above, the Examiner admits that such models are not found in Saylor, and instead cites Kuhn for such features. But although Kuhn may teach the use of user-specific speech models, the combination

of references fail to teach any common speech recognition module capable of supporting a plurality of such user-specific models to support a plurality of service providers.

The Examiner cites Saylor as teaching a common VPage Server 22 supporting a the uploading of VPages from a plurality of content providers (see page 3 of the Office action, citing Saylor Fig. 3 and col. 21, lines 10-45), but it is clear that these VPages are *not* user-specific speech models adapted to specific users, as no hint of such functionality can be found in the reference. The Examiner admits that the reference fails to teach such user-specific speech models (see first paragraph of page 4 of the outstanding Office action), instead citing Kuhn for such a teaching. Therefore, the Examiner cites Kuhn for the use of user-specific speech models.

But Kuhn, although directed at a voice recognition system in support of e-commerce, fails to teach a system that can support a *plurality of providers* with user-specific models. There is no suggestion as to how the Kuhn system would be adapted to support a plurality of such providers using the user-specific speech models, and Saylor cannot overcome this shortcoming because it fails to suggest the use of such personalized models. This is not a trivial shortcoming, as the function of managing a plurality of user specific models for use by a plurality of different vendors is nowhere solved by the prior art references. Hence, even if

combined, the two references fail to teach any means or method of utilizing user-specific speech models to support a plurality of different providers, and hence claim 1 is patentable over the references for this reason as well.

D. The Combination of References is Improper as the Examiner has failed to make a *Prima Facie* case of Obviousness.

In support of his reasons for combining Saylor and Kuhn, the Examiner argues that it would be “obvious” to make such a combination “in order to improve speech recognition accuracy by using user-specific speech models” (see first paragraph on page 5 of the outstanding Office action). This is merely a conclusory statement that is based on improper hindsight analysis. Similar arguments are provided by the Examiner on pages 7, 10, 12, and 13 of the Office action.

The Examiner clearly uses the result of the claimed invention as a basis for the benefits of the combination, without showing why one skilled in the art would make such a combination. This is nothing more than improper *ex post* reasoning. See *KSR v. Teleflex*, 127 S. Ct. 1727, 1742 (2007). The Examiner has not shown that the problem being solved is known in the art, or that the solution would be obvious to one skilled in the art. The Supreme Court has made clear that obviousness rejections cannot be based on mere conclusory statements (KSR at 1741: “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with

some rational underpinning to support the legal conclusion of obviousness" citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006)). In this case, the Examiner has failed to provide any rationale other than a mere generalized benefit that is obtained from the application itself by improper *ex post* reasoning. The Examiner has failed to provide any "rational underpinning" to support his rejection, and thus the Examiner has failed to meet the burden required in support of a prima facie case of obviousness.

Accordingly, the rejections for obviousness cannot stand, and must be withdrawn, and thus the claims are patentable over this combination of references for this reason as well.

E. Claim 30 is patentable for reasons similar to those discussed for Claim 1

Claim 30 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) "independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality" where these applications include "an executable component for execution by a voice portal hosting system" (discussed in section I.B), such that (3) "said user-specific speech model is further adapted during said ordering such that said further adapted model

is then utilized for future ordering of products and/or services from another of said service providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 30 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

F. Claim 50 is patentable for reasons similar to those discussed for Claim 1

Claim 50 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “independently uploading, through a second telecommunication network, said interactive voice response applications to said system for providing interactive voice response functionality” where these applications include “an executable component for execution by a voice portal hosting system” (discussed in section I.B), such that (3) “said common speech models are adapted during each dialogue between said user calling the system and any of said interactive voice response applications of said one of said service providers during said ordering, such that said adapted speech models can be utilized by the other interactive voice response applications for the user ordering products and/or services from the other service

providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 50 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

G. Claim 52 is patentable for reasons similar to those discussed for Claim 1

Claim 52 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “independently uploading a plurality of interactive voice response applications from said service providers, to said system, via a communication channel in advance of ordering products or services using the system, each of said voice response applications for providing interactive voice response functionality” with the interactive voice response applications including “an executable component for execution by said hosting system” (discussed in section I.B), such that (3) “said common speech models are adaptable during dialogue between said users and any of said interactive voice response applications during ordering of products and/or services from the corresponding providers such that said adapted speech models are thereafter utilized by others of said voice response applications for ordering

products and/or services of the corresponding other providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 52 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Note also that claim 52 specifically identifies the executable component as “comprising at least one of an executable file, a Java Bean, a Corba-component, a compiled software module, and a pre-compiled software module”, features that the Examiner apparently ignores in his rejections (and features not found in the references), and thus an additional reason that claim 52 is patentable over the references.

H. Claim 53 is patentable for reasons similar to those discussed for Claim 1 and for at least one more additional reason.

Claim 53 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “uploading means for independently uploading said plurality of interactive voice response applications, to said system, by a plurality of independent value-added service providers” with “each of said applications including an executable

component for execution by said hosting system” (discussed in section I.B), such that (3) the user-specific speech models are adapted “during said ordering such that said adapted user-specific speech model can thereafter be utilized for ordering a product and/or service from another of said providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 53 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, claim 53 recites that the “speaker independent models are used for a new user prior to updating said user-specific speech models to make the new user into a known user”. The Examiner apparently ignores this feature in his rejection of the claim, but neither Saylor nor Kuhn teach that any model is used prior to its being updated. In fact, as discussed above in section I.A., Kuhn apparently refines its models during creation, and never discloses use before such refinement (and also fails to teach refinement during use), and thus claim 53 is patentable over the references for this reason as well.

I. Claim 55 is patentable for reasons similar to those discussed for Claim 1 and for at least one more additional reason.

Claim 55 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “independently uploading, to said system...interactive voice response applications which provide interactive voice response functionality” with said applications including “an executable component for execution by a voice portal hosting system” (discussed in section I.B), such that (3) “the retrieved user-specific speech model of the known user is further adapted during said ordering such that said user-specific speech model is thereafter made available for the new or known user to interact with another of said interactive voice applications for ordering a service or product from another of said providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 55 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, claim 55 specifically requires “identifying a user calling said system as a known user or a new user a user independent speech model is initially used for a new user” and “retrieving the user-specific speech model of the known

user from said plurality of models or else retrieving a speaker independent model for the new user and generating a user-specific speech model for the new user without using any training phase”, thereby initially requiring the use of user independent models without any training phase for new users but using user-specific speech models for known users. Such a feature is not discussed by the Examiner, and neither reference teaches using these two different models depending on whether the user is a new user or a known user. Thus, claim 55 is patentable over the Saylor and Kuhn for this reason as well.

J. Claim 57 is patentable for reasons similar to those discussed for Claim 1 and for at least one more additional reason.

Claim 57 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “storing said interactive voice response applications from said providers on said system for providing interactive voice response functionality” with the applications including “an executable component for execution by a voice portal hosting system” (discussed in section I.B), such that (3) “the user-specific speech model for the user is further adapted during said interacting such that said user-specific speech model is thereafter made available for interacting with any other of said voice response applications associated with another of said providers” (discussed in section I.A).

Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 57 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, like claim 55, this claim requires the initial use of independent models without any training phase for new users but using user-specific speech models for known users. Thus, claim 57 is patentable over the Saylor and Kuhn for this reason as well.

K. Claim 60 is patentable for reasons similar to those discussed for Claim 1 and for additional reasons.

Claim 60 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “independently uploading, through a second telecommunication network, said interactive voice response applications to said system for providing interactive voice response functionality, wherein said interactive voice response applications include an executable component for execution by said hosting system” (discussed in section I.B), such that (3) “said common speech models are incrementally adapted during each dialogue between said users and any of said interactive voice

response applications using recording speech samples and without using any training phase such that said adapted models are thereafter made available for use by all of said interactive voice response applications of the providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 60 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, like claim 55, this claim requires the initial use of independent models without any training phase for new users but using user-specific speech models for known users. Thus, claim 60 is patentable over the Saylor and Kuhn for this reason as well.

In addition, claim 60 recites that “said common speech recognition module comprises a common user profile database including user preferences”. The Examiner cites Saylor col. 7, line 58 to col. 8, line 15, for teaching such user preferences. But these sections merely discuss that user information may be collected by the user registering with the system (see col. 7, lines 58 to col. 8, line 15, cited on page 10 of the Office action), with examples of such information including name, address, phone number, billing information, etc. (see lines 60-61). None of this can properly be considered “user preferences” as they are merely hard

data about the user, not “preferences” of the user. For example, user preferences include things like delivery addresses (which, unlike the user address, may vary depending on product ordered), billing addresses (which may vary depending on payment source, e.g., personal vs. business), etc. See, e.g., dependent claims 4-5. Thus, claim 60 is patentable over the references for this reason as well.

L. Claims 61 and 62 are patentable for reasons similar to those discussed for Claim 1 and for at least one additional reason.

Claim 61 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), (2) “uploading means for independently uploading said plurality of interactive voice response applications in advance, to said system, by a plurality of independent value-added service providers” with the interactive voice response applications including “an executable component for execution by said hosting system” (discussed in section I.B), such that (3) “said retrieved user-specific speech model is further adapted to the specific user during said ordering from said corresponding service provider such that said further adapted retrieved user-specific speech model is thereafter utilized by any other of said interactive voice response applications for future ordering of products and/or services from the other corresponding service

providers” (discussed in section I.A). Claim 62 recites similar features. Thus, claims 61 and 62 are patentable over the references for reasons similar to claim 1.

Furthermore, the Examiner has failed to make a *prima facie* case of obviousness with respect to these claims for reasons similar to those discussed for claim 1 in section I.D.

In addition, claim 61 requires “storing a plurality of user-specific speech and language models adapted to specific users for use by the common speech recognition module” such that “said one of said interactive voice response applications utilizes said retrieved user-specific speech and language model via said common speech recognition module for recognizing speech of the identified user during said ordering.” Claim 62 recites similar features as a method.

As is known in the art, there are substantial differences between “speech” models and “language” models. Speech models, for example, can define with HMMs the way different *phonemes* are uttered by various speakers. On the other hand, language models describe the *vocabulary* used by different speakers, and the probability of each word or expression to be used in a given context. Some speakers will, for example, ask "could you please send me a hamburger", while other will just say "hamburger!". User dependant *language* models can become very effective because they take this variability into account, thus leading to a useful improvement in recognition technology. This feature has not been shown

by the Examiner as applied by the current claims (the Examiner merely improperly argues that it is *inherent* to use speech and language models, see paragraph 14 on page 15 of the Office action, which of course is merely a conclusory statement with no supporting basis and clearly not true), and thus, claims 61 and 62 are patentable over the Saylor and Kuhn for this reason as well.

M. Claim 63 is patentable for reasons similar to those discussed for Claim 1.

Claim 63 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), and (2) “independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality” and including an “executable component for execution by said hosting system” (discussed in section I.B), such that (3) “said further adapted retrieved user-specific speech model is made available for use by others of said interactive voice response applications of the other providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 63 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

N. Claim 64 is patentable for reasons similar to those discussed for Claim 1 and for at least one additional reason.

Claim 64 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), and (2) “uploading means for independently uploading said plurality of interactive voice response applications, to said system, by a plurality of independent value-added service providers” where “each of said applications including an executable component for execution by said hosting system” (discussed in section I.B), such that (3) “said retrieved user-specific speech model is further adapted during said interacting and is thereafter made available for use by others of said interactive voice response applications of others of said providers” (discussed in section I.A). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 64 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, claim 64 recites that “said common speech recognition module, said user-specific speech models, and said plurality of interactive voice response applications are all hosted in a single host”, a feature not found in the

cited references and not specifically discussed by the Examiner in the rejections. Accordingly, claim 64 is patentable over the references for this reason as well.

O. Claim 65 is patentable for reasons similar to those discussed for Claim 1 and for additional reasons.

Claim 65 recites features similar to those discussed for claim 1 of (1) supporting a plurality of service providers with user-specific speech models for use by a common speech recognition module (discussed in section I.C), and (2) “independently uploading, to said system, said interactive voice response applications which provide interactive voice response functionality” where “said interactive voice response applications include an executable component for execution by said hosting system” (discussed in section I.B). Furthermore, the Examiner has failed to make a prima facie case of obviousness with respect to this claim for reasons similar to those discussed for claim 1 in section I.D.

Accordingly, claim 65 is patentable over Saylor and Kuhn for reasons similar to those discussed above regarding claim 1.

Furthermore, claim 65 recites that “said retrieved user-specific speech and language model is adapted during said interacting” where the “interacting” is when “the identified user” interacts with “one of said interactive voice response applications of a corresponding one of said providers.” As discussed above, the Examiner cites Kuhn for teaching the use of user-specific speech models, but the

Examiner fails to address the issue of language models, and furthermore, as discussed above, Kuhn teaches that its user models are adapted during their initial construction, not during any interacting with provider supplied interactive voice response applications. Accordingly, claim 65 is patentable over the references for these reasons as well.

P. Dependent Claims 4-5, 7-12, 15, 18-24, 26-28, 31-39, 42-49, 54, 56, 58-59 and 66 is patentable for reasons similar to those discussed above.

Claims 4-5, 7-12, 15, 18-24, 26-28, 31-39, 42-49, 54, 56, 58-59 and 66 depend on one or more of the above discussed claims, and thus are patentable over the references for at least the same reasons as their parent claims.

Furthermore, these claims are also patentable for additional reasons, many of which are also discussed above with respect to various independent claims.

II. Issue 2: Whether Claims 13-14 are patentable under 35 U.S.C. §103(a) over Saylor and Kuhn in view of Beyda.

Claims 13-14 depend on claim 1. Beyda, which is cited by the Examiner for teaching using selections previously made by users, does not overcome the shortcomings of Saylor and Kuhn, and thus claims 13-14 are patentable over the combination for the same reasons discussed for claim 1.

Furthermore, the Examiner's reason for making the combination is to "improve [the] system's efficiency" (see last paragraph page 15 to page 16 of the outstanding Office action). Such broad, conclusory reasoning, as discussed above regarding claim 1, cannot support the specific modification proposed by the Examiner, as any of an infinite number of modifications could instead be utilized to improve efficiency, and thus the rejection cannot stand for this reason as well.

III. **Issue 3: Whether Claims 16-17 and 40-41 are patentable under 35 U.S.C. §103(a) over Saylor and Kuhn in view of Woods.**

A. **Claims 16-17 and 40-41 are Patentable for at least the Same Reasons as their Parent Claims.**

Claims 16-17 depend on claim 1, and claims 40-41 depend on claim 30. Woods, which is cited by the Examiner for teaching the use of a user identification module, does not overcome the shortcomings of Saylor and Kuhn, and thus claims 16-17 are patentable over the combination for the same reasons discussed for claim 1, and claims 40-41 are patentable over the references for the same reasons as claim 30.

B. **Claims 16-17 and 40-41 are Patentable because Woods Fails to Teach the cited Identification Module.**

Claim 16 recites that "said user identification module uses an identification of the equipment used by said user in said first telecommunication network" and claim 17 recites that the identification module is "used by said user in said first

telecommunication network even when said identification is not available for the other B-subscribers of said first telecommunication network”. Claims 40 and 41 recite similar language, respectively. The Examiner cites Woods for such a teaching, citing col. 24, lines 39-41.

But Woods is a reference directed at voice access to Internet-based information, and the cited section merely discusses using “caller ID” as a means of identifying a user. There is no disclosure of any use of an identification module, and one skilled in the art would understand that an “identification module” is neither equivalent to, nor necessary for, caller ID functionality (caller ID is based on the name associated with a telephone number in a telephone company directory, and does not require the use of an identification module). Thus, for this reason as well, claims 16-17 and 40-41 are patentable over the references.

Furthermore, the Examiner’s argument for making the combination is to “automatically authenticate users based on their phone numbers by using caller-ID procedure” (see page 17 of the outstanding Office action) is no reason to add an *identification module*, as such a module has nothing to do with caller-ID, and thus one cannot imply the other. Furthermore, such broad, conclusory reasoning is clearly an attempt to apply improper hindsight analysis, as discussed above regarding claim 1, and cannot support the specific modification proposed by the Examiner, and thus the rejection cannot stand for this reason as well.

CONCLUSION

For the reasons stated above, the Appellant's claims represent a new, useful, and nonobvious system/method of providing a plurality of providers with the ability to *share* user-specific speech models supporting a plurality of users, with the models being updatable when a user interacts with any one of the providers and with the updates being used by *other* providers. The Examiner has failed to establish a prima facie case of obviousness under 35 U.S.C. §103(a) for the claims, in particular because the prior art cited by the examiner, even taken in combination, fails to teach any such *user-specific* speech models being *shared* by a *plurality* of providers, and furthermore the prior art fails to teach such models being further adapted when used for transactions with one provider, with the adaptations being used for transactions with another provider. Consequently, the rejection of the claims for obviousness by the examiner is not supported. Accordingly Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the rejection of claims 1, 30, 50, 52, 53, 55, 57, & 60-65 and return the case to the examiner for issuance of a notice of allowance.

If there are any additional fees resulting from this communication, please charge all uncovered fees to our Deposit Account No. 16-0820, our Order No. P&TS-33226.

Respectfully submitted,

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CLAIMS APPENDIX

Listing of Claims:

1 1. (previously presented) A voice portal hosting system,
2 intended to be connected to a first voice telecommunication
3 network in order for a plurality of users in said network to
4 establish a connection with said system using voice equipment in
5 support of the ordering of products and/or services from any of
6 a plurality of independent value-added service providers, said
7 system comprising:

8 a memory in which a plurality of interactive voice response
9 applications providing interactive voice response
10 functionality is stored, each of said applications
11 including an executable component for execution by
12 said hosting system;

13 a common speech recognition module;

14 means for storing a plurality of user-specific speech
15 models adapted to specific users for use by the common
16 speech recognition module;

17 a user identification module for identifying a user;

18 means for retrieving the user-specific speech model of the
19 identified user from said plurality of models;

20 and

21 uploading means for independently uploading said plurality
22 of interactive voice response applications, to said
23 system in advance of any ordering of said products
24 and/or services, by said plurality of independent
25 value-added service providers, wherein

26 the identified user interacts with one or more of said
27 interactive voice response applications, and wherein

28 said one or more interactive voice response applications
29 utilize said retrieved user-specific speech model via
30 said common speech recognition module for recognizing
31 speech of the identified user, wherein each of said
32 interactive voice response applications includes an
33 executable component for execution by said hosting
34 system, and wherein
35 said user-specific speech model is further adapted to the
36 specific user during said ordering of said product
37 and/or services from any one of said service providers
38 such that said further adapted model is then utilized
39 for future ordering of products and/or services from
40 any other of said service providers.

1 2. (original) The voice portal hosting system of claim 1,
2 wherein said common speech recognition module comprises a common
3 user profile database.

1 3. (original) The voice portal hosting system of claim 2,
2 wherein said common user profile database includes user
3 preferences.

1 4. (original) The voice portal hosting system of claim 3,
2 wherein said user preferences include a delivery address for
3 goods and/or services ordered with said value-added service
4 providers.

1 5. (original) The voice portal hosting system of claim 3,
2 wherein said user preferences include a billing address and/or
3 preferences for goods and services ordered with said value-added
4 service providers.

1 6. (canceled).

1 7. (original) The voice portal hosting system of claim 6,
2 comprising means for adapting said common speech models
3 associated to a user during each dialogue between said user and
4 each of said interactive voice response applications.

1 8. (original) The voice portal hosting system of claim 7,
2 wherein said means for adapting said common speech models uses
3 recorded users' speech samples for adapting said common speech
4 models off-line.

1 9. (original) The voice portal hosting system of claim 1,
2 wherein said common speech recognition module uses Hidden Markov
3 Models, and further comprising a Hidden Markov Models adaptation
4 module for adapting said models to said user.

1 10. (original) The voice portal hosting system of claim 9,
2 wherein said Hidden Markov Models adaptation module allows for
3 an incremental adaptation of said models.

1 11. (original) The voice portal hosting system of claim 1,
2 wherein said common speech recognition module uses user-specific
3 language models.

1 12. (original) The voice portal hosting system of claim 11,
2 comprising means for adapting said common language models
3 associated to a user during each dialogue between said user and
4 each of said interactive voice response applications.

1 13. (original) The voice portal hosting system of claim 1,
2 wherein said common speech recognition module uses selections

3 previously made by said users.

1 14. (previously presented) The voice portal hosting system
2 of claim 13, wherein said selections previously made by said
3 users are stored in said voice portal hosting system for
4 improving the arborescence of the menus.

1 15. (original) The voice portal hosting system of claim 1,
2 wherein at least a plurality of said interactive voice response
3 applications use a common user identification module run on said
4 system.

1 16. (original) The voice portal hosting system of claim 15,
2 wherein said user identification module uses an identification
3 of the equipment used by said user in said first
4 telecommunication network.

1 17. (original) The voice portal hosting system of claim 16,
2 being operated by a telecom operator of said first
3 telecommunication network, wherein said user identification
4 module uses an identification of the equipment used by said user
5 in said first telecommunication network even when said
6 identification is not available for the other B-subscribers of
7 said first telecommunication network.

1 18. (original) The voice portal hosting system of claim 15,
2 wherein said user identification module uses a voice-based user
3 identification module.

1 19. (original) The voice portal hosting system of claim 15,
2 wherein said common speech recognition module uses a speaker-
3 dependant speech recognition algorithm, wherein said speaker is

4 identified by said common user identification module.

1 20. (original) The voice portal hosting system of claim 1,
2 wherein at least a plurality of said interactive voice response
3 applications use a common billing module and a common clearing
4 center for dispatching the collected amounts to said value-added
5 service providers.

1 21. (original) The voice portal hosting system of claim 20,
2 wherein said common billing module allows for the billing of
3 transactions between said users and said value-added service
4 providers on a common bill prepared by the operator of said
5 voice portal hosting system.

1 22. (original) The voice portal hosting system of claim 20,
2 wherein at least a plurality of said users have a deposit
3 account on said voice portal hosting system which can be used
4 for transactions with a plurality of said value-added service
5 providers.

1 23. (original) The voice portal hosting system of claim 1,
2 wherein at least a plurality of said interactive voice response
3 applications use a user authentication module based on an
4 electronic signature and/or on biometric parameters of said
5 users.

1 24. (original) The voice portal hosting system of claim 1,
2 wherein said second telecommunication network is a TCP/IP
3 network.

1 Claim 25 (canceled).

1 26. (original) The voice portal hosting system of claim 25,
2 wherein a compilation module run on said system compiles said
3 interactive voice response applications.

1 27. (original) The voice portal hosting system of claim 1,
2 wherein at least one free interactive voice response application
3 is made available by the operator of said system.

1 28. (original) The voice portal hosting system of claim 27,
2 wherein said free interactive voice response application
3 includes a free directory assistance service.

1 29. (canceled).

1 30. (previously presented) A method for allowing each of a
2 plurality of value-added service providers to set up an
3 interactive voice response application including an executable
4 component for execution by a voice portal hosting system
5 commonly used by said plurality of value-added service
6 providers, said voice response application for being used by a
7 plurality of users for ordering products and/or services from
8 said service providers, said method comprising the steps of:
9 storing a plurality of user-specific speech models adapted
10 to specific users for use by a common speech
11 recognition module;
12 identifying a user calling said system;
13 retrieving the user-specific speech model of the identified
14 user from said plurality of models;
15 independently uploading, to said system, said interactive
16 voice response applications which provide interactive

17 voice response functionality in advance of any
18 ordering of said products and/or services;
19 the identified user interacting with one or more of said
20 interactive voice response applications; and
21 said one or more of said interactive voice response
22 applications using said retrieved user-specific speech
23 model via said common speech recognition module for
24 executing on said hosting system for recognizing
25 speech of the identified user for ordering said
26 products and/or services from one of said service
27 providers such that said user-specific speech model is
28 further adapted during said ordering such that said
29 further adapted model is then utilized for future
30 ordering of products and/or services from another of
31 said service providers.

1 31. (original) The method of claim 30, wherein said
2 interactive voice response applications use a common user
3 profile database stored in said voice portal hosting system.

1 32. (original) The method of claim 31, wherein said
2 interactive voice response applications use user preferences
3 stored in said common user profile database.

1 33. (original) The method of claim 32, wherein said user
2 preferences include a delivery address for goods and/or services
3 ordered with said value-added service providers.

1 34. (original) The method of claim 33, wherein said user
2 preferences include a billing address and/or preferences for
3 goods and/or services ordered with said value-added service
4 providers.

1 35. (original) The method of claim 34, wherein said common
2 speech recognition module uses common users' speech models.

1 36. (original) The method of claim 35, wherein said common
2 speech models associated to a user are adapted during each
3 dialogue between said users and each of said interactive voice
4 response applications.

1 37. (original) The method of claim 30, wherein said common
2 speech recognition module uses common users' language models.

1 38. (original) The method of claim 37, wherein said common
2 language models associated to a user are adapted during each
3 dialogue between said user and each of said interactive voice
4 response applications.

1 39. (original) The method of claim 30, wherein at least a
2 plurality of said interactive voice response applications uses a
3 common user identification module run on said system.

1 40. (original) The method of claim 39, wherein said user
2 identification module uses an identification of the equipment
3 used by said user in said first telecommunication network.

1 41. (original) The method of claim 40, wherein said voice
2 portal hosting system is operated by a telecom operator of said
3 first telecommunication network, wherein said user
4 identification module uses an identification of the equipment
5 used by said user in said first telecommunication network even
6 when said identification is not available for the other B-
7 subscribers of said first telecommunication network.

1 42. (original) The method of claim 39, wherein said user
2 identification module uses a voice-based speaker identification
3 module.

1 43. (original) The method of claim 39, wherein said common
2 speech recognition module uses a speaker-dependant speech
3 recognition algorithm, said user being identified by said common
4 user identification module.

1 44. (original) The method of claim 30, wherein at least a
2 plurality of said interactive voice response applications use a
3 common billing module and a common clearing center for
4 dispatching the collected amounts to said value-added service
5 providers.

1 45. (original) The method of claim 44, wherein said common
2 billing module allows for the billing of transactions between
3 said users and said value-added service providers on a common
4 bill prepared by the operator of said voice portal hosting
5 system.

1 46. (original) The method of claim 44, wherein at least a
2 plurality of said users have a deposit account on said system
3 which can be used for transactions with a plurality of said
4 value-added service providers.

1 47. (original) The method of claim 30, wherein at least a
2 plurality of said interactive voice response applications use a
3 user authentication module based on an electronic signature
4 and/or on biometric parameters of said users.

1 48. (original) The method of claim 30, wherein at least
2 some of said interactive voice response applications are
3 described with Voice extensible Markup Language documents.

1 49. (original) The method of claim 48, wherein a
2 compilation module run on said voice portal hosting system
3 compiles said interactive voice response applications.

1 50. (previously presented) A method for allowing each of a
2 plurality of independent value-added service providers to set up
3 interactive voice response applications each including an
4 executable component for execution by a voice portal hosting
5 system commonly used by said plurality of value-added service
6 providers and which can be used by a plurality of users for
7 ordering products and/or services from said providers, said
8 method comprising the steps of:

9 independently uploading, through a second telecommunication
10 network, said interactive voice response applications
11 to said system for providing interactive voice
12 response functionality, said uploading done in advance
13 of any ordering of said products and/or services,
14 storing a plurality of user-specific speech models adapted
15 to specific users for use by a common speech
16 recognition module,
17 identifying a user calling said system,
18 retrieving the user-specific speech model of the identified
19 user from said plurality of models,
20 and
21 executing one or more of said voice response applications
22 in response to the user calling said system, said
23 executing including interacting with said user via

24 said common speech module using said retrieved user-
25 specific speech model for recognizing the speech of
26 the user for ordering the products and/or services
27 from one of said service providers, wherein
28 said interactive voice response applications include an
29 executable component for execution by said hosting
30 system, and wherein
31 said common speech models are adapted during each dialogue
32 between said user calling the system and any of said
33 interactive voice response applications of said one of
34 said service providers during said ordering, such that
35 said adapted speech models can be utilized by the
36 other interactive voice response applications for the
37 user ordering products and/or services from the other
38 service providers.

1 51. (canceled).

1 52. (previously presented) A voice portal hosting system
2 allowing a plurality of users to establish a connection with
3 said system using voice equipment for interacting with one or
4 more of a plurality of service providers for ordering a product
5 and/or service, said system comprising:
6 means for independently uploading a plurality of
7 interactive voice response applications from said
8 service provides, to said system, via a communication
9 channel in advance of ordering products or services
10 using the system, each of said voice response
11 applications for providing interactive voice response
12 functionality for a corresponding one of said service
13 providers when executed by said hosting system,
14 wherein said interactive voice response applications

15 include an executable component for execution by said
16 hosting system, said executable component comprising
17 at least one of an executable file, a Java Bean, a
18 Corba-component, a compiled software module, and a
19 pre-compiled software module;
20 means for storing said plurality of interactive voice
21 response applications;
22 a common speech recognition module;
23 means for storing a plurality of user-specific speech
24 models adapted to specific users for use by the common
25 speech recognition module;
26 a user identification module for identifying a user calling
27 said system via another communication channel;
28 means for retrieving the user-specific speech model of the
29 identified user from said plurality of models, wherein
30 the identified user interacts with one or more of said
31 interactive voice response applications, and wherein
32 said one or more interactive voice response applications
33 utilize said retrieved user-specific speech model via
34 said common speech recognition module for recognizing
35 speech of the identified user, and further wherein
36 said common speech models are adaptable during dialogue
37 between said users and any of said interactive voice
38 response applications during ordering of products
39 and/or services from the corresponding providers such
40 that said adapted speech models are thereafter
41 utilized by others of said voice response applications
42 for ordering products and/or services of the
43 corresponding other providers.

1 53. (previously presented) A voice portal hosting system,
2 intended to be connected to a first voice telecommunication

3 network in order for a plurality of users in said network to
4 establish a connection with said system using voice equipment
5 for ordering products and/or services from one of a plurality of
6 providers, said system comprising:

7 a memory in which a plurality of interactive voice response
8 applications providing interactive voice response
9 functionality is stored, each of said applications
10 including an executable component for execution by
11 said hosting system;

12 a common speech recognition module;

13 means for storing a plurality of user-specific speech
14 models adapted to specific users for use by the common
15 speech recognition module;

16 a user identification module for identifying a known user
17 or a new user;

18 means for retrieving the user-specific speech model of the
19 known user from said plurality of models;

20 means for updating said user-specific speech models to the
21 new user without using any training phase;

22 and

23 uploading means for independently uploading said plurality
24 of interactive voice response applications, to said
25 system, by a plurality of independent value-added
26 service providers, wherein

27 the identified user interacts with one or more of said
28 interactive voice response applications, and wherein
29 said one or more interactive voice response applications
30 utilize said retrieved user-specific speech model via
31 said common speech recognition module for recognizing
32 speech of the known user ordering a product and/or
33 service from one of said providers, and for further
34 adapting said user-specific speech model during said

35 ordering such that said adapted user-specific speech
36 model can thereafter be utilized for ordering a
37 product and/or service from another of said providers,
38 and wherein
39 speaker independent models are used for a new user prior to
40 updating said user-specific speech models to make the
41 new user into a known user.

1 54. (previously presented) The system of claim 53, wherein
2 each of said interactive voice response applications includes an
3 executable component for execution by said hosting system, said
4 executable component comprising at least one of an executable
5 file, a Java Bean, a Corba-component, a compiled software
6 module, and a pre-compiled software module.

1 55. (previously presented) A method for allowing each of a
2 plurality of value-added service providers to set up an
3 interactive voice response application including an executable
4 component for execution by a voice portal hosting system
5 commonly used by said plurality of value-added service
6 providers, said voice response application for being used by a
7 plurality of users for ordering products and/or services from
8 said providers, said method comprising the steps of:
9 storing a plurality of user-specific speech models adapted
10 to known users for use by a common speech recognition
11 module;
12 identifying a user calling said system as a known user or a
13 new user;
14 retrieving the user-specific speech model of the known user
15 from said plurality of models or else retrieving a
16 speaker independent model for the new user and

17 generating a user-specific speech model for the new
18 user without using any training phase;
19 independently uploading, to said system, said interactive
20 voice response applications which provide interactive
21 voice response functionality;
22 the identified user interacting with one of said
23 interactive voice response applications; and
24 said one of said interactive voice response applications
25 using said retrieved user-specific speech model or
26 said retrieved speaker independent speech model via
27 said common speech recognition module for executing on
28 said hosting system for recognizing speech of the
29 known user or the new user, respectively for ordering
30 a product or service from one of said providers, such
31 that a user-specific speech model for the new user is
32 created or the retrieved user-specific speech model of
33 the known user is further adapted during said ordering
34 such that said user-specific speech model is
35 thereafter made available for the new or known user to
36 interact with another of said interactive voice
37 applications for ordering a service or product from
38 another of said providers.

1 56. (previously presented) The system of claim 53, wherein
2 each of said interactive voice response applications includes an
3 executable component for execution by said hosting system, said
4 executable component comprising at least one of an executable
5 file, a Java Bean, a Corba-component, a compiled software
6 module, and a pre-compiled software module.

1 57. (previously presented) A method for allowing each of a
2 plurality of independent value-added service providers to set up

3 a corresponding interactive voice response application including
4 an executable component for execution by a voice portal hosting
5 system commonly used by said plurality of value-added service
6 providers and which can be used by a plurality of users, said
7 method comprising the steps of:

8 storing said interactive voice response applications from
9 said providers on said system for providing
10 interactive voice response functionality,
11 storing a plurality of user-specific speech models adapted
12 to known users for use by a common speech recognition
13 module,
14 identifying a user calling said system as a known user or
15 new user,
16 retrieving the user-specific speech model of the known user
17 from said plurality of models or retrieving a speaker
18 independent model for a new user and adapting a user
19 specific speech model for the new user,

20 and

21 executing one of said voice response applications
22 associated with one of said providers in response to
23 the user calling said system, said executing including
24 interacting with the user via said common speech
25 module using said retrieved user-specific speech model
26 for recognizing the speech of the known user or using
27 said retrieved speaker independent model for the new
28 user, wherein

29 said common speech models are adapted during each dialogue
30 between said users and any of said interactive voice
31 response applications without using any training phase
32 and wherein

33 the user-specific speech model for the user is further
34 adapted during said interacting such that said user-

35 specific speech model is thereafter made available for
36 interacting with any other of said voice response
37 applications associated with another of said
38 providers.

1 58. (previously presented) The method of claim 57, wherein
2 said interactive voice response applications include an
3 executable component for execution by said hosting system, said
4 executable component comprising at least one of an executable
5 file, a Java Bean, a Corba-component, a compiled software
6 module, and a pre-compiled software module.

1 59. (previously presented) A system for implementing the
2 method of claim 57.

1 60. (previously presented) A method for allowing each of a
2 plurality of independent value-added service providers to set up
3 a corresponding interactive voice response application including
4 an executable component for execution by a voice portal hosting
5 system commonly used by said plurality of value-added service
6 providers and which can be used by a plurality of users, said
7 method comprising the steps of:
8 independently uploading, through a second telecommunication
9 network, said interactive voice response applications
10 to said system for providing interactive voice
11 response functionality, wherein said interactive voice
12 response applications include an executable component
13 for execution by said hosting system,
14 storing a plurality of user-specific speech models adapted
15 to known users for use by a common speech recognition
16 module,

17 identifying a user calling said system as a known user or
18 new user,
19 retrieving the user-specific speech model of the known user
20 from said plurality of models or retrieving a speaker
21 independent model for a new user and adapting a user
22 specific speech model for the new user,
23 executing one or more of said voice response applications
24 in response to the user calling said system, said
25 executing including interacting with the user via said
26 common speech module using said retrieved user-
27 specific speech model for recognizing the speech of
28 the known user or using said retrieved speaker
29 independent model for the new user, wherein
30 said common speech models are incrementally adapted during
31 each dialogue between said users and any of said
32 interactive voice response applications using
33 recording speech samples and without using any
34 training phase such that said adapted models are
35 thereafter made available for use by all of said
36 interactive voice response applications of the
37 providers, and wherein
38 said common speech recognition module comprises a common
39 user profile database including user preferences.

1 61. (previously presented) A voice portal hosting system,
2 intended to be connected to a first voice telecommunication
3 network in order for a plurality of users in said network to
4 establish a connection with said system using voice equipment,
5 said system comprising:
6 a memory in which a plurality of interactive voice response
7 applications providing interactive voice response
8 functionality is stored, each of said applications

9 including an executable component for execution by
10 said hosting system;
11 a common speech recognition module;
12 means for storing a plurality of user-specific speech and
13 language models adapted to specific users for use by
14 the common speech recognition module;
15 a user identification module for identifying a user;
16 means for retrieving the user-specific speech and language
17 model of the identified user from said plurality of
18 models;
19 and
20 uploading means for independently uploading said plurality
21 of interactive voice response applications in advance,
22 to said system, by a plurality of independent value-
23 added service providers, wherein
24 the identified user interacts with one of said interactive
25 voice response applications for ordering a product or
26 service from the provider corresponding to the one of
27 said interactive voice response applications, and
28 wherein
29 said one of said interactive voice response applications
30 utilizes said retrieved user-specific speech and
31 language model via said common speech recognition
32 module for recognizing speech of the identified user
33 during said ordering, and wherein said retrieved user-
34 specific speech model is further adapted to the
35 specific user during said ordering from said
36 corresponding service provider such that said further
37 adapted retrieved user-specific speech model is
38 thereafter utilized by any other of said interactive
39 voice response applications for future ordering of

40 products and/or services from the other corresponding
41 service providers.

1 62. (previously presented) A method for allowing each of a
2 plurality of value-added service providers to set up an
3 interactive voice response application including an executable
4 component for execution by a voice portal hosting system
5 commonly used by said plurality of value-added service providers
6 for selling products and/or services, said voice response
7 application for being used by a plurality of users to order said
8 products and services, said method comprising the steps of:
9 storing a plurality of user-specific speech and language
10 models adapted to specific users for use by a common
11 speech recognition module;
12 identifying a user calling said system;
13 retrieving the user-specific speech and language model of
14 the identified user from said plurality of models;
15 independently uploading, to said system, said interactive
16 voice response applications which provide interactive
17 voice response functionality;
18 the identified user interacting with one of said
19 interactive voice response applications; and
20 said one of said interactive voice response applications
21 using said retrieved user-specific speech and language
22 model via said common speech recognition module for
23 executing on said hosting system for recognizing
24 speech of the identified user for ordering products
25 and/or services from the provider corresponding to
26 said one of said interactive voice response
27 applications, and wherein, said retrieved user-
28 specific speech model is further adapted to the
29 identified user during said ordering such that said

30 further adapted retrieved user-specific speech model
31 is thereafter utilized for ordering of products and/or
32 services from any others of said service providers
33 using their corresponding interactive voice response
34 application(s).

1 63. (previously presented) A method for allowing each of a
2 plurality of value-added service providers to set up an
3 interactive voice response application including an executable
4 component for execution by a voice portal hosting system
5 commonly used by said plurality of value-added service
6 providers, said voice response application for being used by a
7 plurality of users, comprising the steps of:
8 storing a plurality of user-specific speech models adapted
9 to specific users for use by a common speech
10 recognition module;
11 identifying user equipment being used by a user calling
12 said system;
13 identifying the user using the user equipment;
14 retrieving the user-specific speech model of the identified
15 user from said plurality of models;
16 independently uploading, to said system, said interactive
17 voice response applications which provide interactive
18 voice response functionality;
19 the identified user interacting with one of said
20 interactive voice response applications; and
21 said one of said interactive voice response applications of
22 one of said providers using said retrieved user-
23 specific speech model via said common speech
24 recognition module for executing on said hosting
25 system for recognizing speech of the identified user
26 and for updating said retrieved user-specific speech

27 model, wherein said interactive voice response
28 applications include an executable component for
29 execution by said hosting system, and wherein
30 said further adapted retrieved user-specific speech model
31 is made available for use by others of said
32 interactive voice response applications of the other
33 providers.

1 64. (previously presented) A voice portal hosting system,
2 intended to be connected to a first voice telecommunication
3 network in order for a plurality of users in said network to
4 establish a connection with said system using voice equipment,
5 said system comprising:
6 a memory in which a plurality of interactive voice response
7 applications providing interactive voice response
8 functionality is stored, each of said applications
9 including an executable component for execution by
10 said hosting system;
11 a common speech recognition module;
12 means for storing a plurality of user-specific speech
13 models adapted to specific users for use by the common
14 speech recognition module;
15 a user identification module for identifying a user;
16 means for retrieving the user-specific speech model of the
17 identified user from said plurality of models;
18 and
19 uploading means for independently uploading said plurality
20 of interactive voice response applications, to said
21 system, by a plurality of independent value-added
22 service providers, wherein

23 the identified user interacts with one of said interactive
24 voice response applications of a correspond one of
25 said providers, and wherein
26 said one of said interactive voice response applications
27 utilize said retrieved user-specific speech model via
28 said common speech recognition module for recognizing
29 speech of the identified user, wherein said retrived
30 user-specific speech model is further adapated during
31 said interacting and is thereafter made available for
32 use by others of said interactive voice response
33 applications of others of said providers, and wherein
34 said common speech recognition module, said user-specific
35 speech models, and said plurality of interactive voice
36 response applications are all hosted in a single host.

1 65. (new) A method for allowing each of a plurality of
2 value-added service providers to set up an interactive voice
3 response application including an executable component for
4 execution by a voice portal hosting system commonly used by said
5 plurality of value-added service providers for selling products
6 and/or services, said voice response application for being used
7 by a plurality of users to order said products and services,
8 said method comprising the steps of:
9 storing a plurality of user-specific speech and language
10 models adapted to specific users for use by a common
11 speech recognition module;
12 identifying a user calling said system;
13 retrieving the user-specific speech and language model of
14 the identified user from said plurality of models;
15 independently uploading, to said system, said interactive
16 voice response applications which provide interactive
17 voice response functionality;

18 the identified user interacting with one of said
19 interactive voice response applications of a
20 corresponding one of said providers; and
21 said one or more of said interactive voice response
22 applications using said retrieved user-specific speech
23 and language model via said common speech recognition
24 module for executing on said hosting system for
25 recognizing speech of the identified user, wherein
26 said interactive voice response applications include
27 an executable component for execution by said hosting
28 system, and wherein
29 said retrieved user-specific speech and language model is
30 adapted during said interacting.

1 66 (new) The method of claim 65, wherein said adapted
2 retrieved user-specific speech and language model is made
3 available for use by all others of said interactive voice
4 response applications of the other providers.

EVIDENTIARY APPENDIX

No evidence relied upon in this appeal has been submitted in this application.

Related Proceedings Appendix

There are no related proceedings.